

# CHAPTER I:

## THE ABCS OF LOGICAL, LASTING LAUNCHES

### Considerations for design, location, and type of water body

#### ◇ *What makes a launch logical and lasting?*

A logical, lasting launch provides safe and easy access for paddlers while accommodating the topographic, climatic, and ecological characteristics of its location. Ideally, its construction is cost-efficient and durable and has little impact on the environment and riparian ecology.

#### ◇ *The ABCs, Ds and Es of launch design*

It is important to consider a variety of factors when developing a launch design. Consider the following goals:

**Accessible**

**Best-suited**

**Cost-effective and Durable**

**Environment-friendly**

#### ***Accessible to all paddlers***

Paddlers of all abilities want to launch and land smoothly without capsizing or damaging their boats. They need firm surfaces that support their movements and sufficient space to accommodate the length of their boats during put-in and take-out. Paddlers must be able to stabilize their boats during transition to and from the water. Climbing in and out of boats can be especially challenging when there is significant height difference between seat levels and shoreline. Additionally, federal law requires that all boating facilities provide access to paddlers with disabilities whenever possible (*see Chapter III for details*).

#### General recommendations for designing an accessible launch

- **Height above water:** Between 9" and 2' from highest expected water level
- **Width:** At least 5' wide, preferably 6' to 12'
- **Length:** At least 25' to allow paddlers "dry" access to entire length of their boats
- **Slope:** ADA Accessibility Guidelines require that slopes not exceed 8.33% whenever possible; A slope exceeding 15% will make transition from land to water difficult for any paddler
- **Support:** Handrails or other support structures, including step-down designs or ropes, help paddlers balance their weight during put-in and take-out
- **Location:** Ideally in areas without heavy flow, erosion, exposure to elements, heavy boat traffic, or fragile riparian habitats

## ***Best-suited***

The type of launch chosen should be suitable for a particular access location, meaning that it should be the most sensible choice considering the characteristics of the water body, as well as relevant climatic and ecological factors.

### General recommendations

*A launch that is “best-suited”:*

- Is constructed in accordance with any applicable regulations
- Provides safe access, away from potential river hazards, especially at different flow level
- Can withstand flow levels, currents, and exposure to elements at a particular site
- Accommodates paddlers in varying water depths
- Provides a firm surface for launching, despite changes in sedimentation levels
- Will not be easily damaged due to climatic or seasonal conditions
- Does not cause damage to riparian habitats or vegetation during its construction and is unlikely to have environmental impacts over time and through usage
- Is not constructed in an area vulnerable to erosion
- Is constructed with consideration to its intended uses and frequency of use

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## ***Cost-effective and Durable***

Existing natural sites (e.g., banks, rocks, beaches) are preferable, as they cost nothing to develop; however, they may not be durable and can require reinforcement over time. Minimal construction will keep costs low and help maintain a natural appearance along a shoreline. If construction is necessary, using durable materials reduces the need for later repairs or replacements, yet the speed at which materials weather will depend on climatic factors and level of exposure to currents and winds.

In some cases, existing docks used by motorized boats can provide stable surfaces for paddleboat access, but many standard docks rise too far above the surface of the water to enable a safe and easy put-in for paddlers. Some boat docks may be modified or easily improved to make them more paddler-friendly; for example, they can be lowered, lengthened, or widened. Ramps can be made less steep or step-downs may be added, along with handrails, cleats, or windbreaks. Shoreline features, such as boardwalks and bulkheads, can be combined with floating docks to enable hand-launching.

*The Humboldt Bay Trails Feasibility Study* is an example of a detailed assessment conducted by the Redwood Community Action Agency of existing launch facilities around Humboldt Bay in Eureka, CA. The study offers recommendations on simple improvements that can be made to launch areas to make them more paddler-friendly. The study can be downloaded online at <http://www.rcaa.org/baytrails/> from the Redwood Community Action Agency’s website.

### General recommendations

- Use construction only when absolutely necessary. In many cases, an actual launch structure may not be needed; firm or sandy banks, level rocks, and beaches can often provide sufficient access (*see Chapter IV*); kayakers may only need a hardened bank for access
- Choose access sites with minimal exposure to winds and heavy currents, preferably near calmer areas of water, such as near eddies; if this is not possible, consider creating a vegetative or other type of buffer to provide protection from the elements
- To reduce construction needs and costs, make modifications to existing boat docks or shoreline structures to make them more “paddler-friendly”
- Construct launches that serve multiple purposes, such as mitigating erosion or restoring wetland vegetation; simple ramps or implanted beaches may help to stabilize a fragile bank or provide “soft treatments” while also enabling access

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### ***Environment-friendly***

Use of low-impact designs and non-toxic materials is essential to watershed health, from protecting water quality, vegetation, and riparian habitats to enabling sustainable recreation. In many states, environmental regulations must be considered prior to, and during, launch construction.

### General recommendations

- Investigate any applicable regulations; develop launch designs in accordance with these regulations
- Use structures requiring minimal construction or alteration to the shoreline (*see Chapter XI for information on low-impact designs*)
- Consult with local natural resource specialist during the planning and construction phases to screen for the presence of ecologically sensitive nesting sites, rookeries, spawning areas, or endangered species; an optimal put-in site may not be feasible for ecological reasons
- Merge the needs of natural functions and the desired recreational uses of the water; with rivers and streams, avoid making any channel modifications and preserve in-stream habitats as much as possible
- Monitor watershed conditions and changes in stream morphology continually
- Gather data from local or state agencies that monitor water levels and flows to develop a launch that will accommodate the conditions of the water body over time
- Avoid using hard reinforcements (e.g., concrete, steel, rock) where shorelines are eroding; use bioengineering methods, such as developing a riparian buffer planted with native species, to protect vegetation and habitats and stabilize shorelines while sheltering the launch area from the elements; along streams, wider buffers can allow space for lateral movements and can help to re-establish meander over time -- these methods allow plant species to become self-sustaining and can also improve aesthetics

### ***Additional considerations***

Additional factors to consider in launch design are preservation of historic or cultural landscapes, as well as aesthetics. Historic sites may have particular characteristics or regulations that influence where a launch can be constructed or what types of materials may be used. See Chapter XI for an example of environmental assessments conducted to protect an historic canoe launch at Fort Clatsop National Memorial.

## ◇ ***Location, location, location***

Whether or not a launch will be effective and be able to provide sustainable access depends largely upon its location and the characteristics of the water body it is on.

### General recommendations

*Access is preferable in areas that have:*

- Minimal exposure to strong currents and winds, such as river eddies or in a cove or inlet
- No physical barriers, such as impassable sections, dams, or weirs
- Distance from other boat traffic, so that paddlers do not have to cross heavy traffic areas
- Water levels enabling year-round use
- Good water quality
- Little lateral movement that could erode the riverbank
- Visibility from both river and shore, allowing paddlers to locate the launch site easily

Natural resource specialists should be consulted throughout the planning, design, construction, and maintenance phases.

American Whitewater (<http://www.americanwhitewater.org>) provides detailed guidance on choosing and developing access areas, including information on legal considerations, in their *Acquisition & Management Guide*.

The Openlands Project (<http://www.openlands.org>) also offers a *Launch Site Facilities Checklist* (<http://www.openlands.org/template.asp?pgid=185>) that provides useful information on planning for access facilities.

## ◇ ***Considerations for different water bodies: Rivers, Whitewater and Swiftwater Rivers, Tidal Estuaries and Coastal Areas, Lakes***

### ***Rivers***

It is best to access a river in an area with little current, located on the inside of a meander bend, or, along straighter sections of a channel, below a meander on the opposite side from a river's cutting side. Areas of heavy flow should be avoided, since strong currents cause wearing on the site over time and can be hazardous to paddlers. Having some movement in the water, however, may prevent excessive sediment accumulation that could cause a canoe or kayak to get stuck. Ideally, there would be a moderate level of deposition that forms a natural beach area suitable for launching.

High/low flow rivers can change character dramatically when water levels fluctuate with seasons or rainfall. For example, water levels can rise rapidly due to spring melting or heavy rains. They can also rise with varying dam releases. Rocks, snags, low trees, and other hazards may be disguised during high flow, making them difficult to avoid; they may also be dangerous to paddlers at low flow. Some rivers turn into mudflats during low flow, which can make access nearly impossible unless there is a firm surface with sufficient water depth for launching.

Meander bends on large floodplain rivers may be temporary features, given the dynamic nature of flows, therefore launch design should take into account possible channel migration over time. Aerial photos over a period of years may be available from the U.S. Geological Survey (USGS) and can be helpful resources in analyzing channel migration.

Federal and state government agencies, such as USGS, the U.S. Army Corps of Engineers, and state water surveys, can usually provide information on average water heights. These are important statistics to know before constructing a launch on any site.

Since no two rivers are identical, building an effective launch will depend on a river's individual characteristics and on a range of topographic, ecological, and climatic factors. Stream channel patterns are impacted by stream flows, sediment depositions, climatic conditions, and landforms. Bank erosion rates, bed stability, slopes, riparian vegetation and habitats also affect a river's structure and behavior. Similarly, no two points along a river are the same. Rivers also change character along their courses and over time; occurrences on one segment affect what happens downstream.

## ***Whitewater and Swiftwater Rivers***

Rivers that experience dramatic differences in flow and water level with seasonal changes or varying dam releases require launch areas that can withstand these extreme fluctuations and accommodate paddlers in a wide range of circumstances.

Access to whitewater and swiftwater rivers is preferable near eddies or calmer sections, but heavy flows may still destroy built launch structures in these areas. For this reason, natural shoreline areas that can be easily and cheaply reinforced are typically the best option for launching. Level beaches, flat rock outcrops, and sturdy banks may be sufficient. Some launch structures, such as concrete staircases, may withstand heavy flows provided that undercutting does not cause erosion at the site. Concrete strips can also be used to divert runoff from a launch area (*see Chapter VIII*).

Banks adjacent to bridges, provided that access is permitted in these areas, may provide consistent access during changing flows. Access from the road to these areas are often convenient, and the armoring used to protect bridges can also protect the launch area.

## ***Tidal Estuaries and Coastal Areas***

As with rivers, access in coastal areas is preferable in areas protected from waves and winds. Tidal water bodies may experience dramatic changes in water level with the tides. Similar to high/low flow rivers, a deep channel can become a muddy flat within a period of hours. Tidal changes can pose risks to paddlers when rocks or other hazards are exposed in lower water levels. Launches need to be built to withstand tidal fluctuations and possible impacts caused by floating debris or aquatic life carried in or left behind by tidal currents. Materials used to construct launches should be salt-resistant.

Vegetated banks with informal launch and take-out sites can be fragile and subject to trampling by paddlers, who may be unaware of their impact. Rocks or other natural materials may be placed in a way that directs paddlers toward specified launch areas and paddlers can be educated about their impacts. Maintaining natural grasses along these banks will help control erosion and preserve wildlife habitat.

Environmental factors specific to salt water areas should also be considered. For example, the level of sunlight needed by marsh and marine grasses should be taken into account when choosing a launch location or type. Some structures that block light may prevent vegetation from receiving sufficient light for growth. Additionally, using piles or other support structures on sandy estuary bottoms may cause sediment displacement.

## ***Lakes***

Built launch structures may not be needed on lake sites where shorelines are less vulnerable to heavy currents and fluctuating water levels. However, access is still recommended in relatively protected areas with minimal exposure and erosion problems. Shallow, marshy areas should be avoided, as they are difficult to navigate and likely to host fragile wetland ecosystems. Lakes can vary greatly in size, character, and behavior. The Great Lakes, for example, behave like tidal water bodies. Launch sites suitable for coastal areas should be considered in these areas.